

NOTES ON THE BIRDS OF KASHMIR

BY

B. B. OSMASTON, M.B.O.U.

PART I

(*With a Plate and a Map*)

The Dominions of the Maharaja of Kashmir cover an area of about 90,000 square miles of mountainous country which is bounded on the north by the Karakoram Mountains, on the east by Chinese Tibet, on the south by the Punjab, on the west by Frontier Tribal Territory, the North-West Frontier Province and the Punjab.

It comprises the following main Divisions :—

- (1) The Kashmir Valley.
- (2) The Kishenganga Valley
- (3) Gilgit.
- (4) Astor.
- (5) Baltistan.
- (6) Ladakh (including Rupshu.)
- (7) Jammu (including Punch.)
- (8) Kishtwar.
- (9) Bhadarwa.

The area included in the State extends from points on the southern boundary which are only 1,000' above sea level up to many peaks in the Karakoram Mountains which exceed 25,000' and one of which, Mount Godwin-Austen, is over 28,000' and probably the second highest mountain in the world.

As a result of such differences in altitude the climate varies from semi-tropical to arctic, and from a moderately moist country, in the Valley of Kashmir to extreme dryness with desert conditions, in Ladakh.

An idea of the altitudes to be met with in the various parts of the State may be obtained from the following figures :—

- Kashmir Valley, 5,000'. Side valleys up to 15,000'.
Kishenganga Valley, 2,000' up to 12,000'.
Gilgit, 4,300' upwards.
Astore, 7,800' ,,
Baltistan, Skardu, 7,500' Mountains up to 24,000' and higher.
Ladakh, 9,000' to 18,000'. Mountains up to 22,000'.
Jammu, 1,000' to 14,000'.
Kishtwar, 3,000' to 16,000'.
Bhadarwa, 3,000' to 12,000'.

With such wide differences in climate and elevation there are corresponding changes in the fauna and flora. The outer hill slopes of Jammu support a forest of mixed deciduous species, as well as the Long-leaved Pine, and a number of birds which do not penetrate into the Valley of Kashmir. Similarly a certain number of Eastern Himalayan forms are found in Kishtwar or Bhadarwa which do not enter the Kashmir Valley.

The Valley of Kashmir is nearly level and contains much cultivation, rice, maize, etc., and includes several lakes and many extensive swamps which are a paradise for aquatic birds.

The chief trees found in the valley are Poplars, Willows, Mulberries and the Plane (Chenar). The side valleys are well forested, the lower slopes with Walnut, Hazel, Perrottia, Elm, etc., passing up into Blue pine, Silver and Spruce firs, Deodar (local), Yew, Cherry, Maple, Birch and Juniper. Rhododendrons are local and rather scarce. The total absence of oaks is a marked feature of the forests of Kashmir.

In Ladakh and Baltistan, the rainfall is very small and in the former tree growth is altogether absent except in very restricted areas where irrigation from snow-fed streams has permitted plantations to be made. Here we find Poplars and Willows.

Thorny scrub is also found in the vicinity of streams and low thorny bushes, e.g., *Caragana* spp. on the most favourable slopes not far from streams,

The birds found in Ladakh are largely distinct from those occurring in Kashmir proper.

The birds described below comprise those met with by the writer in the course of a number of tours undertaken during the four years 1922 to 1925 inclusive, the areas visited being :—

- (1) The main Valley of Kashmir.
- (2) Gulmarg and Tosha Maidan in the Pir Panjal Range.
- (3) The Sind and Lidar Valleys.
- (4) Haramukh Mountain and the surrounding country.
- (5) Ladakh, including Rupshu, Nubra and the Pangong Lake.
- (6) The Suru and Dras Valleys.
- (7) Nunkun and the head waters of the Wardwan Valley.

Birds recorded as occurring in areas not visited by me viz. (1) Jammu, (2) Kishtwar, (3) Bhadarwah, (4) Baltistan, (5) Gilgit and (6) the Kishanganga Valley have not been included. Of these Jammu would add a large number of species found in the western submontane hills. The other areas would not probably add many species.

In the following notes the measurements of eggs are given in millimetres. 'L' stands for the longest egg, 'S' for the shortest, 'B' the broadest, and 'N' the narrowest.

1. *Corvus corax tibetanus*. The Himalayan Raven.

This species is not found in Kashmir proper, but is fairly common throughout Ladakh in dry rocky country from about 10,000' altitude up to the snow line at about 16,000' or 17,000'. They are chiefly seen in the neighbourhood of villages but they are also found in rocky desolate country far from habitations. They are very common in and around Leh (elevation 11,600') where I have seen as many as a dozen at a time feeding in the cornfields.

They eat grain as well as flesh. The note is a hoarse croak. They are very early breeders, nidification commencing about the middle of February, fresh eggs being obtainable in March and April.

Nests are usually placed in very inaccessible positions on cliffs. Only rarely can they be reached without a rope. A nest found by me near the Tsokar Lake at 15,000 ft. was composed of sticks, densely lined with yak's hair.

Two eggs obtained are bluish-green in ground marked with sepia and grey. They are rather broad ovals. They measure 50·0 × 35·3 and 47·3 × 34·3 respectively.

2. *Corvus coronoides intermedius*. The Himalayan Jungle Crow.

Fairly common in Kashmir, especially in the side valleys and near 'margs' (open grassy glades) where sheep and goats congregate. They are not very common in the main valley, but are much more numerous as one ascends the hills, and they are found up to the limits of sheep grazing i.e., up to about 12,000'. They are usually seen in pairs but where food is plentiful, e.g. near large villages or where sheep collect, they may be seen in parties of a dozen or so.

They are bold and at the same time extremely wary. They destroy many small birds' nests, devouring both eggs and young.

They build large nests of sticks in trees from 20' to 40' up, which are lined with a dense layer of wool and hair. Four or five eggs are laid towards the end of April or early in May, of the usual crow type.

14 eggs, taken in the Sind Valley at about 7,000', average 42·5 by 29·7.

3. *Corvus corone orientalis*. The Eastern Carrion Crow.

This species is not common in Kashmir but on crossing the Great Himalayan Range into Ladakh it is at once seen, and is found, together with the Raven, in the Indus Valley, and side valleys (Dras, Suru, etc.) from 9,000' to about 12,000'. It is not numerous anywhere, but a few pairs are to be found at intervals all along the Treaty Road from Dras to Leh.

The note of the bird is distinct from that of the Jungle Crow, being hoarser and more like that of the Raven. Several nests were found in willow trees early in May, some empty, others with eggs in various stages of incubation. The eggs are indistinguishable from those of the Jungle Crow. The nests are also quite similar to those of the latter bird.

Eggs vary in length from 47·3 to 39·4 and in breadth from 30·5 to 27·8, the average of 21 eggs being 42·5 by 28·1.

4. *Corvus splendens zugmayeri*. The Sind House Crow.

This is the common house crow of Srinagar, where it is found in very large numbers. It is also found in Baramula, at the entrance of the valley and in the villages between Srinagar and Baramula, but not elsewhere in the Kashmir Valley. Passing down the Jhelum Valley it is not found until one reaches Garhi, at 2,600' elevation, 60 miles from Baramula. The Kashmir Valley community would therefore appear to be quite isolated and may eventually become a distinct local race. The crow is resident throughout the winter and does not seem to mind the snow. They breed in and around Srinagar in willow and poplar trees. Five is the full complement of eggs laid, which vary considerably in size and colour. Longest egg, 43.2×27.4 . Shortest, 37.0×26.1 . Broadest, 40.5×27.7 . Narrowest, 40.5×26.0 . Average of 17 eggs, 39.0 by 26.6 .

5. *Corvus monedula saemmeringii*. The Eastern Jackdaw.

This species is exceedingly common throughout the Valley of Kashmir, where it is a resident species. They extend up the side valleys to about 7,000' but they are not common out of the valley. They are most numerous in and around Srinagar. Their ordinary call note is similar to that of the European Jackdaw.

In the winter they leave Srinagar before sunrise in enormous flocks composed of thousands of birds which fly south along the Jhelum River to feed in the cultivated fields along the river often many miles away and they return after sunset in similar flocks.

In February they pair and select nesting sites, generally holes in chenar or willow trees or in banks. Building does not commence till April and eggs are laid in the first week of May. Nests are composed of sticks, lined with wool and hair, or sticks may be dispensed with, 4, 5 or 6 eggs are laid, which resemble those of its European cousin.

After breeding, early in August, flocks of birds repair to the open grassy slopes above tree level at from 9,000' to 12,000' returning to the valley when driven down by snow in September or October.

The following egg measurements were taken:—*L.* 39.1×25.6 . *S.* 30.0×24.0 . *B.* 35.4×26.3 . *N.* 36.6×23.6 . Average of 55 eggs, 35.1×24.8 .

This species is not found in Ladakh except as a very rare straggler.

6. *Pica pica bactriana*. The Kashmir Magpie.

This species is common throughout the desert, treeless country of Ladakh, from 9,000' up to 12,000' and rarely as high as 13,000'. It is not found in Kashmir proper, and the trivial name 'the Kashmir Magpie' is therefore misleading.

Unlike its European relative it avoids forest country and is found chiefly near villages, provided there is a tree or a bush in which to build its nest.

The only trees found in Ladakh are willows or poplars, which are planted singly or in small plantations on irrigated land near villages, and such trees afford nesting sites for the magpie. In the absence of trees the magpie will build in a thorn bush only 5 or 6 feet from the ground.

Nests are composed of sticks, roofed over with thorns. Inside is a solid cup of mud which is lined with fine roots. Often several nests may be found superimposed, of several consecutive years, the uppermost only being occupied. 5, 6 and even 7 eggs are laid which are similar in colour to those of the English Magpie. They measure:—

In length from 43.1 to 32.4 . In breadth from 27.1 to 23.1 . The average of 112 eggs is 36.5 by 24.9 .

7. *Urocissa flavirostris cucullata*. The Western Yellow-billed Magpie.

This is not a very common bird but is found generally distributed in fir and mixed forest from 4,000' in the Jhelum Valley up to about 8,000' in the silver fir forest. They are generally met with in pairs or in small family parties.

They breed in May. The nest is rather small, cupshaped, and made of small sticks lined with roots.

8. *Nucifraga multipunctata*. The Larger-spotted Nutcracker.

This bird is generally distributed throughout the fir and pine forests of Kashmir at from 7,000' to 9,000', but is only locally at all common, in forests

of blue pine. They feed chiefly on the seeds of the blue pine. They have a hoarse grating call.

Nests are difficult to locate. They are built in pine and fir trees at a considerable height from the ground. Eggs are laid chiefly early in May.

9. *Pyrrhonorax pyrrhonorax*. The Red-billed Chough.

This is a common species both in Kashmir and in Ladakh, at high elevations. They are inclined to be gregarious, and are found in summer at high elevations only from about 10,000' up to 17,000'. They are generally most numerous in Ladakh in the vicinity of villages where they feed in the fields in company with Ravens and the Blue Rock and Blue Hill pigeons.

In the winter, especially in January, they descend to about 5,000' or 6,000' and may then be seen in the valley near Srinagar.

They also frequent wild rocky precipitous country far from human habitations. Their nests are often solitary, placed on inaccessible cliffs, but occasionally also they breed in communities, as near Leh where a sandy cliff contained upwards of 40 nests all more or less accessible with a rope or a ladder. In this case the nesting holes in the soft sandstone had evidently been excavated by the birds themselves.

Nests are composed of wool and hair with or without a foundation of sticks.

Eggs are laid early in May, three or four constituting a full clutch.

The eggs are whitish in ground colour, marked all over with yellowish brown and grey. L. and B., 43.9 × 28.6. S. and N., 36.8 × 26.3. The average of 36 eggs is 39.2 by 27.6.

10. *Pyrrhonorax graculus*. The Alpine Chough.

This species is found generally distributed at high elevations 10,000' to 16,000' in Kashmir and also, though much less common than the red-billed variety, in Ladakh. I found it nowhere so common as the red-billed chough, with which it frequently associates.

Nests are built on precipices at high elevations and are usually quite inaccessible.

11. *Parus major kaschmiriensis*. The Kashmir Grey-Tit.

This tit is common in the Valley of Kashmir extending up the side valleys and into the hills up to an elevation of about 7,000' and rarely higher. A very similar tit, probably the same species, occurs also in the Indus Valley from 9,000' to 11,000' and also at Leh, and in the Shyok and Nubra Valleys.

They remain in the Kashmir Valley throughout the year. Breeding commences early in May. A common site for the nest is a deserted nest hole of the little Blue King-fisher. More rarely they build in holes in trees.

The nest is the usual pad of hair, and 6 to 9 eggs are laid resembling those of the British Great Tit but smaller. L., 20.1 × 13.5. S., 16.4 × 12.2. B., 18.5 × 13.9. N., 16.4 × 12.2. Average of 31 eggs 17.5 × 13.4.

12. *Parus monticolus*. The Green-backed Tit.

This species, so common in the Western Himalayas generally, is rather scarce in Kashmir.

It was observed on 2 or 3 occasions only near Gulmarg at about 9,000' elevation.

13. *Ægithaliscus concinnus iredalei*. The Red-headed Tit.

This little tit does not occur in the Valley of Kashmir. It was only observed in the Jhelum Valley at about 3,000' in March. It is doubtless common in the hills of Jammu south of the Pir Panjal Range.

14. *Ægithaliscus niveogularis*. The White-throated Tit.

This species is rare in Kashmir. A single specimen only was observed feeding with other tits and *Phylloscopi* near Gulmarg at 9,500'. This was on September 20.

15. *Lophophanes melanolophus*. The Crested Black Tit.

This little tit is exceedingly common in the pine and fir forests on the hills surrounding the main and side valleys from about 6,500' up to 11,000'. In

the winter months they descend to lower elevations and are common around Srinagar.

They hunt trees for insects in company with *Phylloscopi* and other small birds.

They breed in holes in trees in May and June generally in fir forest, the nest being the usual pad of wool and hair, on a substratum of moss.

5 or 6 eggs are generally laid, which are white, richly marked with chestnut.

Eggs give the following measurements :—

L., 17.2×11.1 . S., 14.6×11.9 . B., 14.6×11.9 . N., 14.9×10.9 .
The average of 11 eggs is 15.8 by 11.5 .

16. *Lophophanes rufonuchalis rufonuchalis*. The Simla Black Tit.

This bird is not uncommon in the silver fir forests where it is found along with the preceding species, than which however it is much less common. They are also found in the Valley of Kashmir in the winter months.

This bird is superficially very similar in appearance to *L. melanolophus* from which however it may be readily distinguished by (1) its larger size, (2) its general darker colour and (3) the absence of wing-bars.

17. *Sylviparus modestus simlaensis*. The Simla Yellow-browed Tit.

This bird is only to be seen in Kashmir on the autumn migration, small flocks occurring in Srinagar towards the end of September or early in October, hunting over trees after the manner of tits.

Nothing is known about the breeding of this species.

18. *Sitta kashmiriensis*. Brooks's Nuthatch.

Fairly common in mixed forest from about 7,000' to 9,000'. It is a quiet bird resembling in its habits and appearance the British Nuthatch.

A nest was found in the nest hole of a Pied Woodpecker in a dead birch tree, the hole being about 20' from the ground. This was at 9,000' elevation. On June 29, it contained 3 unfledged young. The nest hole had been reduced in size by the construction of a ring of very hard mud masonry.

19. *Sitta leucopsis leucopsis*. The White-cheeked Nuthatch.

This is a fairly common bird in the silver fir forests from about 8,000' to 10,000'.

It is readily recognized by its harsh call, generally uttered from near the top of a lofty tree. The birds keep very much to the crowns of the taller trees.

Nidification commences in May, and natural holes in coniferous trees are utilized as nesting sites. Nests are usually at some 20' or more from the ground. No attempt is made to reduce the size of the entrance hole with mud as in some other species.

20. *Trochalopteron variegatum simile*. The Western Variegated Laughing-Thrush.

This is a fairly common species in the upper hill forests from about 9,000' to 11,000'. Open forests of silver fir and birch, where there is plenty of young growth, rhododendron, etc., are preferred. It is commoner on the Pir Panjal Range than on the mountains east of the Kashmir Valley.

21. *Trochalopteron lineatum griseicentior*. The Simla Streaked Laughing Thrush.

Common in the hill forests, especially in miscellaneous scrub jungle, from 6,000' up to about 9,000', both on the Pir Panjal and lower slopes of the Himalayan Range. About the last week in September many birds leave their breeding grounds, descending to the main valley. They may be seen in and around Srinagar throughout the winter months.

Breeding commences in June, nests being placed in low bushes or on the ground, in grass, on steep banks. From 2 to 4 eggs (generally 3) are laid, the measurements of which are as follows:—L. and B. 27.4×19.9 , S., 24.1×18.3 . N., 24.7×17.7 . Average of 16 eggs 25.8 by 18.7 .

22. *Molpastes leucogenys leucogenys*. The White-cheeked Bulbul.

This bird is exceedingly common throughout the main Valley of Kashmir, where it is resident. It is also found, for a short distance only, up the side valleys

up to an elevation of about 6,000' only. They are numerous in the gardens and wooded compounds in and around Srinagar where they frequently become very tame, entering houses and house-boats in quest of food. In the winter months they live to a great extent on house-boats. They breed in April and May, the nest being placed in any low bush, or in fruit trees, etc. Three, more rarely four, is the full complement of eggs. Egg measurements are as follows:—

L., 24.2×17.1 . S., 21.5×16.6 . B., 22.5×17.5 . N., 22.6×16.0 . Average of 33 eggs, 22.8 by 16.7 .

23. *Microscelis psaroides psaroides*. The Himalayan Black Bulbul.

A very common bird in the early spring in and around Srinagar where they feed in flocks, largely on the fruit of the Persian Lilac tree (*Melia azedarach*). By April or early May they move up to their breeding haunts in the lower mixed forests at about 7,000'.

24. *Certhia himalayana*. The Himalayan and Turkestan Tree-Creepers.

Kashmir is the meeting ground of two races of this species viz. (1) *C. h. himalayana* and (2) *C. h. tenuirostris*. They are both common birds in Kashmir. In the summer months they are found chiefly in the fir forests from 7,000' to 10,000'. In winter they descend to the Valley of Kashmir and many go still lower to the foot hills and even as far as Rawalpindi and Peshawar. They breed in the fir forests chiefly between 8,000' and 9,000', a favourite nest site is behind the semi-detached bark of a big spruce or silver fir. Nests are from 5 feet from the ground upwards. The bird is an early breeder, eggs being obtainable throughout May. Both nests and eggs resemble those of the English bird.

25. *Certhia familiaris hodgsoni*. Hodgson's Tree-Creeper.

This species is not nearly so common in Kashmir as the preceding from which it may be recognized at close quarters by the absence of cross barring on the tail. I observed it on several occasions in the silver fir forest above Gulmarg and shot one specimen late in July in the Lidar Valley in open birch forest at 12,000'.

26. *Tichodroma muraria*. The Wall-Creeper.

This species is fairly common in the Valley of Kashmir from October to March, frequenting precipitous rocky and sandy cliffs on warm sunny aspects at this time of the year. Many birds migrate even further in winter, to the foot hills and plains of the Punjab and they may always be seen at this season on the sandstone cliffs along the Soan river near Rawalpindi. Early in April they leave their winter quarters resorting to much higher altitudes, the majority crossing the Himalayan barrier into Ladakh, where they breed between 11,000' and 13,000'. Breeding birds were observed in June and July in the Gya Valley, also near Tankse and Khardong, all at about 12,000'. Nests are built in holes in precipitous rocky ground often near streams. Some birds also breed on the Kashmir side of the Himalayan Range, a pair having been observed in July at 12,000' near the headwaters of the Lidar.

27. *Troglodytes troglodytes neglectus*. The Kashmir Wren.

This little wren is a common bird throughout the silver fir forests of Kashmir on the Pir Panjal as well as on the Himalayas. In summer they are found from about 8,000' upwards throughout the silver fir and birch zones and even above the forest limit up to about 12,000' in boulder-strewn and rocky ground.

In the winter these birds move down to the valley and may be seen in and around Srinagar. They probably go still lower down the Jhelum Valley but apparently never extend their migration to the plains.

In their habits they resemble the British wren. They have the same loud, rapid, cheery song. Nests and eggs also resemble those of its western relative. They are usually placed in sheltered places, in the upturned roots of a big fallen tree, in a crack in a leaning tree, or in the roof of a deserted Gujars' hut. Four or five eggs are laid in June which measure as follows:—L., 18.3×11.9 . S., 15.3×12.4 . B., 16.9×13.3 . N., 16.3×12.0 . Average of 35 eggs, 17.0 by 12.5 .

28. *Larvivora brunnea*. The Indian Blue Chat.

This is a fairly common bird from about 7,000' to 9,000' in rather open fir and mixed forest. The bird frequents brushwood in open parts of the forest and is a great skulker. Its loud clear notes are often heard, but the bird is rarely seen. Nests resemble those of the English robin but they often have a few feathers incorporated in the lining of the nest. They are built on the ground, either in steep banks or at the foot of a big fir tree, in the angle between two buttresses. The eggs are unspotted pale blue.

Nidification commences early in June. The Asiatic cuckoo often places her egg in the nest of this bird.

This species is equally common in the valleys of the Himalayas and on the Pir Panjal Range. It is migratory, disappearing altogether in October for Southern India.

Five eggs average 20.4 by 14.8.

29. *Hodgsonius phœnicuroides phœnicuroides*. Hodgson's Shortwing.

This species is locally commoner than the preceding which it somewhat resembles in its habits. It is equally shy and retiring. They are found at rather higher altitudes, from about 8,500' up to 10,000'. They frequent dense scrub jungle of viburnum, juniper, etc., and avoid tree forest. The call of three notes is melancholy and characteristic.

The nest is placed about a foot from the ground in dense bushes, grass and tall weeds.

Eggs, generally 3 in number, are deep spotless blue. The bird is migratory, disappearing from Kashmir in October. Where they spend the winter months is not known.

Egg measurements are as follows:—L. and B., 23.9×16.9. S., 20.6×15.7 N., 20.8×14.1. Average of 31 eggs. 22.2 by 16.1.

30. *Saxicola torquata indica*. The Indian Bush-Chat.

This is one of the commonest birds in Kashmir on the lower, more open, rocky and bush covered slopes of the surrounding hills.

They are most numerous at about 6,000' elevation, but are found up to about 8,000' and occasionally higher.

They are migratory, arriving about the middle of March and departing early in October.

The male has a short little song in the spring. Breeding commences in May, nests being well concealed in holes under stones or at the foot of small bushes on steep, rocky hillsides.

Four or five eggs are laid which are pale blue, marked with faint chestnut spots in a zone at the large end. The Asiatic cuckoo frequently selects the nest of this bird in which to deposit its egg.

Egg measurements are as follows:—L., 19.0×14.0. S., 15.6×13.4. B., 18.9×14.1. N., 17.3×13.1. Average of 93 eggs, 17.3 × 13.5.

31. *Oreicola ferrea ferrea*. The Dark-grey Bush-Chat.

This bird frequents similar open bushy hillsides to the last, but is much less common.

It is found rather sparingly both on the Pir Panjal and Himalayan ranges, generally at about 7,000' to 8,000'.

Nests and nesting sites are similar to those of the Indian Bush-Chat. Eggs, too, are similar to those of the last named species, but larger and generally paler. They measure:—L., 18.5×14.5. S., 16.8×13.8. B., 17.9×14.5. N., 18.5×13.5.

They disappear from Kashmir in the winter.

32. *Euanthe deserti oreophila*. The Tibetan Desert-Chat.

This bird is found at high elevations only, in Ladakh. They frequent rocky, sandy, desert country, both plateaux and steep hillsides, from about 10,000' up to 17,000', where they are often the only birds to be seen. They are nowhere numerous.

They are early breeders, nidification commencing in May. Nests are placed under rocks or stones or in the ' mane ' walls, and are composed of small sticks and dry grass, lined with hair and feathers.

Four or five eggs are laid, which are pale blue lightly spotted or speckled with pinkish-brown. They measure in length from 24.2 to 20.8 and in breadth from 17.2 to 15.6. The average of 11 eggs bring 22.3 by 16.6.

These birds are occasionally seen in the Valley of Kashmir on the spring migration.

33. *Enicurus maculatus maculatus*. The Western Spotted Forktail.

Not uncommon in the side valleys of the Himalaya and Pir Panjal Ranges between 6,000' and 7,000'. They frequent shady streamlets, where they breed in May-June, the nest being placed up against a mossy rock or overhanging bank close to the water.

34. *Microcichla scouleri scouleri*. The Little Forktail.

This is a rare bird in Kashmir, being found at about 8,000' by rocky hill streams and torrents. I only came across this species on two or three occasions, so it is evidently not common.

35. *Phoenicurus frontalis*. The Blue-fronted Redstart.

This species is found widely distributed, but at high elevations only, both on the Pir Panjal and on the Western slopes of the Himalayan Range. They frequent open rocky slopes above the forest limit at from 11,000' to 13,000'. They are not nearly so common in Kashmir as further east in Garhwal. They breed in May, the nest being placed on the ground on a steep rocky slope under a rock or stone.

The eggs are pale cafe-au-lait faintly marked with pinkish-brown.

One nest was found in the Lidar Valley at 11,500' on July 27, containing a half-fledged young cuckoo (*C. canorus telephonus*).

36. *Phoenicurus erythronotus*. Eversmann's Redstart.

A regular cold weather visitor to the Kashmir Valley, where it is found singly or in pairs in orchards, gardens, etc., from November to January. It is not very common.

37. *Phoenicurus ochrurus phoenicuroides*. The Kashmir Redstart.

This bird, which winters in the plains of India, is found on the spring and autumn migration in the Valley of Kashmir. Towards the end of April they all retire to their breeding haunts at high altitudes. The great majority cross the Himalayan barrier into Ladakh, but a few remain to breed on the Kashmir side of that range.

They breed at all elevations from about 10,000' up to the snowline at 17,000'. Male birds are not infrequently seen breeding in female plumage. They are one of the commonest birds in Ladakh, being found in and around villages and cultivation as well as in desert tracts. The nest is built very frequently in a stone wall, or under a rock or stone on a mountain slope. The bird has a pleasant little short song of 4 or 5 notes in the breeding season. The alarm call is a note resembling u-tick . . . hence the Ladaki name—'sin-tick' for the bird.

Eggs are 4, more rarely 5 in number, pale or very pale spotless blue and sometimes almost white. Some eggs have a few pinkish spots on them.

A bird of this species was observed in July in the Suru Valley feeding a fully fledged young Asiatic cuckoo, though how the mother cuckoo obtained access to the nest of this redstart for purposes of oviposition is a mystery, as nests are placed in holes among stones.

38. *Phoenicurus erythrogaster grandis*. Guldenstadt's Redstart.

This bird occurs rather sparingly in Ladakh at considerable elevations only.

In the winter months they appear to move down to 10,000' or perhaps lower in the Indus Valley. In May they move up to their breeding haunts at from 13,000' to 16,000'. They frequent streams and mountain torrents. Superficially they strongly resemble *Chaimarrhornis*, the White-capped Water Redstart, from which they may however be at once distinguished by the white wing patch. Nidification commences early, fresh eggs being obtainable in the first week in June. Nests are rather bulky affairs, composed of wood and dried grass matted together and lined with hair and a few feathers.

The eggs, four in number, are white marked with pale rufous or chesnut and resemble well marked eggs of the English robin.

Seven eggs average 22.4 by 17.0.

39. *Chaimarrhornis leucocephala*. The White-capped Redstart.

This is a common bird in Kashmir on all hill streams from about 8,000' to 12,000'. In winter they descend to low levels and even to the plains, e.g. Rawalpindi. They breed chiefly at from 9,000' to 10,000' from May to July.

Nests are well concealed in holes in steep banks over a river or stream, in a cavity in the face of a rock or even in a hole in a tree.

The bird has no song but a characteristic very shrill call note. The colouring of the two sexes is identical.

Eggs are very pale blue marked with some shade of rufous brown. The average of 4 eggs is 23.1 by 16.3.

40. *Rhyacornis fuliginosa fuliginosa*. The Plumbeous Redstart.

This bird is found along all hill streams in Kashmir in company with the last species, but it does not ascend to such high altitudes, being rarely seen above 9,000'. The colour of the two sexes is quite different, the cock bird having a bright chestnut tail, whereas the tail of the hen bird is chiefly white. They breed in May and June. The nest is generally well concealed in a hole in a rock, stump or tree overhanging the water, less frequently in a hole in a tree at some distance from the stream.

The eggs, usually four in number, are very pale greenish-white spotted with chestnut-brown. L., 20.9 × 14.9., S. and N., 17.3 × 13.5. B., 20.4 × 15.2. Average of 14 eggs, 19.8 by 14.6.

41. *Cyanosylvia succica pallidogularis*. The Eastern Red-spotted Blue-throat.

This species is not known to breed either in Kashmir or in Ladakh. It occurs in large numbers in the Valley of Kashmir in September and October on the autumn migration, frequenting the thick cover of maize fields and reed-beds.

As soon as the maize is cut the birds leave for the plains of India where they spend the winter months.

42. *Cyanosylvia cyanecula abboti*. The Eastern White-spotted Blue-throat.

This species is fairly common in summer in Ladakh in the Indus Valley and its tributaries between 9,000' and 11,500'. They are found chiefly along river beds and streams, and they are very partial to wet ground covered with a low thorny shrub, *Lonicera spinosa*, in fact they are rarely or never seen except in or near this thorny scrub, and wherever a decent-sized patch of this scrub occurs one may be almost certain of finding one or more pairs of this species.

They feed mostly on the ground near the patches of thorns, in which, at the least alarm, they speedily take cover. The male bird has a very fine song of loud, clear notes. Nidification commences in May, fresh eggs being available from the last week of May throughout June. The nest is a most difficult one to locate, being placed on the ground well concealed in grass at the base of a thorn bush. Except for the exit of the parent bird the nest would generally escape detection. The nest is composed of dry grass only. The eggs, 3 or 4 in number, are of a uniform pale sage green colour more or less suffused with very pale reddish brown.

The cock bird has a pure shining white or red spot on a deep glistening blue ground, or more rarely there may be no spot at all. The hen bird has also the blue-throat with a spot which is usually very pale rufous.

A number of nests were found with eggs in various stages of incubation and with young in the Indus-Suru Valleys from May 26, to the end of July. Measurements of eggs give the following figures:—L. and B., 20.0 × 15.0. S., 18.5 × 14.6. N., 19.3 × 13.6. Average of 20 eggs, 19.1 by 14.3.

Where these birds go in winter is not known to me.

43. *Calliope pectoralis pectoralis*. The Himalayan Ruby-throat.

This beautiful bird is quite common on the steep rocky and grassy mountain slopes above the forest level, especially where there is much juniper scrub. They are found on the Pir Panjal as well as on the Himalayan slopes, but are far more numerous on the latter. They are commonest at from 11,000' to 12,000'. The cock has a fine loud song. Nidification commences in June and eggs are obtainable throughout June and July. Nests are well concealed on the ground,

among rocks and grass or in low juniper scrub. The nest is composed of dry grass and is domed, with a large lateral entrance. Four eggs are laid, rather dark bluish-green with pale rufous markings. This species is largely parasitized by the Asiatic Cuckoo. Of five nests found this year one contained a young cuckoo and another a cuckoo's egg.

This species is found on the Ladakh side of the Himalayan Range as well as on the Kashmir side.

Measurements of eggs are as follows:—L., 22.4×15.2 . S. and N., 19.7×15.0 . B., 21.8×15.8 . Average of 9 eggs, 21.0 by 15.3 .

44. Calliope tschbaiewi. The Tibetan Ruby-throat.

This bird, which resembles the preceding species, but differs from it in having a white cheek stripe, is local and rather rare in Ladakh.

It was only observed by me in one locality, viz. near Ramla, between Shushal and the Indus River, between 14,000' and 15,000'. Here they were fairly numerous in the wide stretches of thorny furze (caragana) intersected with small streams. In their habits and song they resemble the Himalayan species. Two nests were found at the base of furze bushes both of which contained young (three and two respectively). This was on June 30. Nests were quite similar to those of the Himalayan Ruby-throat.

45. Ianthia cyanura rufilata. The Red-flanked Bush Robin.

This is a very common bird in summer in the silver fir and birch zone in Kashmir between 9,000' and 11,000'. They are found in the forest, chiefly on northern aspects. They have no song, only a 3-noted call in which the middle note is a tone lower than the first and third. They are shy birds and very wary when their nest is anywhere in the vicinity.

The nest is placed on the ground, generally in a hole in a bank or fallen log. It is nearly always lined with musk deer hair.

The eggs are laid in May and are very pale greenish-white, faintly speckled with rufous. Eggs measure as follows:—L. 18.8×13.2 . S. and N., 16.9×12.9 . B., 17.7×14.4 . Average of 9 eggs, 17.9 by 13.7 .

I have never seen this species in winter.

46. Adelura cœruleocephala. The Blue-headed Robin.

This bird occurs sparingly on steep, rocky hillsides on the Himalayan Range between 9,000' and 11,000'. They avoid tree forest, preferring open rocky country. The cock bird is a fine songster. The bird is not common anywhere in Kashmir and so far I have failed to find its nest, but they undoubtedly breed in rocks at about 10,000'.

47. Turdus merula maximus. The Central Asian Black-bird.

This is nowhere a common bird in Kashmir, but is found widely distributed at high elevations above the tree limit between 11,000' and 13,500'. They prefer open steep rocky country especially where there is thick low cover of dwarf juniper or dwarf rhododendron. The song of the male is very poor and monotonous. They are wild, wary birds, very difficult to approach. They are found equally on the Pir Panjal and Himalayan Ranges. On June 23, I saw a pair with young able to fly on the mountain slope above Gulmarg at 11,000'. Subsequently on July 11, I observed a pair hopping about on the ice on the surface of Sona Sar lake (Lidar Valley) at 12,500'. This was before sunrise. They were busy collecting hymenopterous insects, lying numbed by cold on the ice, and carrying them up to their young concealed up above on a precipitous rocky juniper-covered slope. I have never seen these birds in the Kashmir Valley in winter and they probably do not descend in winter below about 8,000'.

48. Turdus castaneus castaneus. The Grey-headed Thrush.

This is a moderately common bird in the big dense forests of silver fir from about 8,000' to 10,000', both on the Pir Panjal and on the Himalayas. They are shy, quiet, unobtrusive birds as a rule. The cock bird is a really fine songster, perhaps the best of the thrush family in India, not excepting *Turdus boulboul*.

They breed in June, the nest being quite low down against a tree stump or rock or even on the ground.

Eggs are of the blackbird type but rather richly marked. A nest was found on June 19, in the Lidar Valley in dense fir forest on a large mass of rock, two feet from the ground. It contained three eggs, the average measurements of which are 30·1 by 21·9.

49. *Turdus atrogularis*. The Black-throated Thrush.

This is only a winter visitor to the Valley of Kashmir where they are moderately common. They may be seen feeding among the willows in and around Srinagar from October to March. They do not breed in Kashmir territory.

50. *Turdus unicolor*. Tickell's Thrush.

This is one of the commonest birds in the Kashmir Valley in summer. They are restricted to the valley proper, being only found to a limited extent in the side valleys up to about 6,000' elevation. They frequent orchards and gardens and are especially numerous in and around Srinagar.

They arrive in March, leaving again in October, after the reaping of the apple crop. From the end of March throughout April and May these birds unite in a chorus of song in the very early morning, before dawn and again to a less extent in the evening. The song is rather poor and monotonous as compared with that of the English thrush or blackbird. They are fairly tame and confidential, feeding early and late on grassy lawns and in the autumn on apples (chiefly windfalls).

They breed from early May throughout June. The nest is like that of the English blackbird, but rather less massive. The eggs too, are like small editions of those of the blackbird, but eggs with a marked rufous colouration are commoner than is the case with those of the English blackbird.

The dimensions of eggs are:—L., 28·9×20·5. S. and N., 25·2×18·2. B., 28·3×21·7. The average of 89 eggs is 27·1 by 19·3.

51. *Arceuthornis viscivorus bonapartei*. The Himalayan Missel Thrush.

This bird is found, but is not very numerous, on the hills in rather open fir and birch forest, at from 9,000' to 11,000' both on the Pir Panjal and Himalayan Ranges. They have similar habits and song and a similar alarm call to that of the English missel thrush. Two nests only were observed, one on June 23 at 9,000' was on the lower branch of a silver fir tree some 6' from the ground. It contained 3 eggs. A second nest 5' from the ground in a young silver fir contained 3 young on July 15.

The eggs taken seem rather large and elongate but are similar in colouration to those of the home bird. They average 34·5 by 21·8.

52. *Monticola solitaria pandoo*. The Indian Blue Rock Thrush.

These birds are migratory, arriving in Kashmir and Ladakh in April and May leaving in the autumn for the plains. They are not uncommon on rocky, precipitous hillsides from 5,500' to about 15,000'. They frequent open hillsides and do not enter the forest.

The cock bird has a fine song in the spring uttered from the top of a rock as well as on the wing. At this time of the year when courting, the male bird indulges in slow vol-planing flights in the sunshine, thereby exhibiting to the best effect his blue plumage.

Nests are placed in holes and clefts in steep rocky precipitous ground and are generally difficult to reach and not infrequently quite inaccessible. They are made of roots and lined with fine roots. The eggs, four or five in number are either pale spotless blue, or blue with faint pinkish brown specks. They measure:—L., 27·3×19·7. S. and N., 26·1×18·5. B., 27·0×20·9, the average of 14 eggs being 26·7 by 19·7.

53. *Monticola cinclorhyncha*. The Blue-headed Rock Thrush.

This is not a common bird in Kashmir, but is found widely distributed both on the Pir Panjal and Himalayan slopes in rather open forest between 6,000' and 9,000'. I have occasionally seen it as high as 10,000'. The song is loud and clear but rather monotonous.

A single nest only was found in the Lidar Valley on a steep bank in forest at 6,500' containing 3 fresh eggs on June 12, which average 23·7 by 17·9.

54. *Myiophonus temminckii temminckii*. The Himalayan Whistling Thrush.

Common in summer, along all big hill streams from about 6,000' up to 11,000' and occasionally even higher. In winter they descend to the lower valleys and even to the plains. The song of the bird is fine and loud with considerable variation, but is not to be compared with that of his southern relative in the Central Provinces and Madras. Breeding commences in May and June according to elevation. The nest of moss, lined with roots, is placed in a niche in a rock or boulder often in mid-stream and quite inaccessible, more rarely on a tree.

The eggs, generally 3 in number, are long ovals, pale greenish or cream coloured faintly mottled or freckled with pinkish markings; they measure as follows:—L., 40·2 × 25·7. S. and B., 34·7 × 27·0. N., 40·2 × 24·6. Average of 10 eggs, 36·9 by 25·6.

55. *Laiscopus collaris whymeri*. The Turkestan Hedge-Sparrow.

This species is found at high elevations in Kashmir in summer, breeding on rocky precipitous ground above the tree limit at altitudes of 12,000' and upwards. It is also found in Ladakh at even higher elevations.

A pair were seen at 12,500' above the Gangabal Lake near Hara Mukh Mountain on August 13. They had a brood of well fledged young, fully a month old. Another pair were seen below the Khardong Pass above Leh on July 23 at 16,500'. They were evidently breeding. A third pair was secured in winter on the Takht-i-Suliman (elevation 6,000') near Srinagar on December 14.

56. *Laiscopus himalayanus*. The Altai Hedge-Sparrow.

Found occasionally in flocks in the lower hills in Kashmir on the spring migration. Two birds shot from a large flock on the Takht (Srinagar), 5,500', on March 17. Not seen in summer.

57. *Prunella rubeculoides*. The Robin Hedge Sparrow.

One of the common birds of Ladakh between 13,000' and 16,000' elevation. They are found chiefly in low scrub, the Tibetan furze (*caragana*, sp.) dwarf willow, etc. and also in stony, rocky ground. They are tame and confiding. The cock bird has rather a sweet, short song. Nidification commences towards the end of May. Nests are composed of dry grass and weed stems, profusely lined with wool or hair, and are placed very low down, almost on the ground, at the base of furze bushes more rarely under stones. Three or four eggs are laid of a uniform pale turquoise blue.

Eggs vary in length from 23·4 to 19·7 and in breadth from 15·7 to 14·9, the average of 41 eggs bring 21·1 by 15·3.

58. *Prunella fulvescens fulvescens*. The Brown Hedge-Sparrow.

This is a comparatively rare bird in Ladakh. They frequent similar ground to that in which the previous species is found, but fifty of the Robin Hedge Sparrow are seen to every one of this species. Nests are placed in low bushes about 2' from the ground. Both nest and eggs are similar to those above described, but the few eggs (7) taken average, a little smaller viz., 20·9 by 15·0.

59. *Prunella atrogularis*. The Black-throated Hedge-Sparrow.

Occasionally seen in the Valley of Kashmir on the spring migration. A bird was shot at Pari Mahal (Srinagar), at 6,000', on March 14.

60. *Prunella strophiatea jerdoni*. Jerdon's Hedge-Sparrow.

This is a common bird in the silver fir and birch forest from 9,000' to 11,000', both on the Himalayan Range and on the Pir Panjal. It has a short, rather pretty song interspersed by occasional harsher notes. Nidification commences early in June. Nests are usually placed in low bushes, also not infrequently in the foliage of the lower branch of a silver fir and sometimes as high as 10' from the ground.

The nest is composed of sticks, moss and weed stems and is lined with fine grass, hair and feathers.

Three or four eggs, spotless blue, are laid, which vary in length from 19·7 to 17·5 and in breadth from 14·5 to 13·2, the average of 19 eggs being 18·6 by 13·8.

61. Hemichelidon sibirica gulmergi. The Kashmir Sooty Flycatcher.

This is quite the commonest flycatcher in Kashmir. They are found throughout the silver fir and birch forests from about 8,000' to the limit of tree growth (11,000'). They hawk flies from a fixed perch and are not at all shy. They may be seen feeding near the tops of the highest fir trees as well as close to the ground. The subspecific name of this bird is a happy one, as nowhere is the bird found more numerous than in the vicinity of Gulmarg.

Breeding commences early in June, nests being placed in the leafy portion of silver fir boughs at any height from the ground, from about 7' upwards, or in birch trees. The nest is a neat compact cup composed of grey lichens and moss consolidated with spiders' web, and lined with fine strips of grass or inner bark with a few hairs or feathers.

Three eggs, more rarely four or only two, are laid of a pale greenish stone colour with a tinge of pale rufous suffused around the broad end of the egg.

Eggs give the following measurements:—L., 15.6 × 11.7. B., 16.1 × 12.8. S. and N., 15.1 × 11.5. The average of 11 eggs is 16.0 × 12.1.

62. Siphia parva parva. The European Red-breasted Flycatcher.

This species is fairly common in the Kashmir Valley in the spring and autumn migration and a good many may usually be seen in and around Srinagar in September-October. I have never, however, come across a bird in the breeding season either in Kashmir or in Ladakh.

63. Siphia parva hyperythra. The Indian Red-breasted Flycatcher.

This is a very common species in Kashmir in the summer, breeding in June, in the side valleys, e.g. Sind and Lidar, at from 6,500' to 7,500'. They are very partial to mixed forest of hazel, walnut, cherry, willow, etc., especially where there is a dense growth of perrottia.

The nest is placed in a hole in a small tree at a height of from 5' to 20' from the ground. It is usually invisible from the outside and can only be obtained by enlarging the small entrance hole. It is composed of skeleton leaves, moss, strips of bark, etc., and is lined either with finer strips of bark or with hair.

The eggs 4 or 5 in number are very pale green in ground marked chiefly at the broad end with pale pinkish brown.

They pass through the valley, including Srinagar, in September and early October on their way to Ceylon, where they spend the winter.

Eggs measure as follows:—L., 17.9 × 13.0. B., 17.5 × 13.1. S., and N., 15.4 × 12.4. Average of 36 eggs, 16.6 × 12.5.

64. Cyornis superciliaris superciliaris. The White-browed Blue-Flycatcher.

This bird, so common in the hill forests in Garhwal and Kumaon, is not very common in Kashmir. It is found in the mixed forests of blue pine, silver fir and broad-leaved species at from about 6,300' to 9,000', and here they breed.

The nest is usually in a hole or rift in the trunk of a tree from 10' to 20' from the ground. It is composed of moss and dry grass and is lined with fine strips of bast and a little hair.

The eggs, 3 to 5 in number, are similar to those of *Siphia parva* described above, but the markings are less distinct in this species than is the case with eggs of *Siphia*.

Eggs measure (average) 15.1 by 11.9.

65. Cyornis tricolor tricolor. The Slaty-blue Flycatcher.

This is a very common bird in the silver fir forests of Kashmir breeding from about 8,000' to 10,000' in June and July. The cock has a pretty little short song, not often heard. This species frequents the undergrowth and lower branches of trees in the forest. The nest is placed in a shallow hole or rift in the bark of a tree generally well within each of the hand. The alarm call of the bird is 'Ee-tick.' Nests are composed of fine moss consolidated with cobwebs and lined with still finer moss and a little hair. Four or three eggs are laid which are a beautiful pale buff with a pale rufous cap or ring at the broad end. They measure:—L., 16.4 × 12.1. S., 13.9 × 11.4. B., 16.2 × 12.5. N., 13.9 × 11.4. Average of 52 eggs, 15.6 by 12.1.

66. Alseonax ruficaudus. The Rufous-tailed Flycatcher.

This species is not uncommon in Kashmir both on the Himalayan and Pir Panjal Ranges in mixed as well as silver fir forest from 7,000' up to 9,000'.

They are restless little birds wandering about in the crowns of trees, from tree to tree, the male giving utterance to his short rather loud song of three or four notes only, repeated at short intervals. They are solitary in their habits and resemble arboreal chats rather than typical flycatchers. The nest resembles that of *Hemichelidon sibirica* described above, and is placed on a side branch of a silver fir or other tree generally over 20' from the ground.

The nest is a very difficult one to find as the cock bird feeds at a considerable distance from the nest which he very rarely visits.

The eggs, usually 3 in number, are laid in June or July and are similar in colour to those of *Siphia*, being very pale greenish in ground, freckled with pale rufous chiefly at the broad end. The average of 3 eggs is 17.5 by 13.9.

67. Culicicapa ceylonensis ceylonensis. The Grey-headed Flycatcher.

This bird was not met with in the Kashmir Valley. A single bird was seen near Domel in the Jhelum Valley at about 2,000'. This was on October 31.

The call-note of this bird is so loud and characteristic that it would be impossible to overlook its presence, and it is certainly very rare in Kashmir.

68. Terpsiphone paradisi leucogaster. The Himalayan Paradise Flycatcher.

This beautiful bird is common in the Valley of Kashmir during the summer months, ascending the hills and side valleys up to about 6,000' only.

They begin to arrive about the middle of April and they have all gone by the middle of October. They have a rather pretty song of a few notes, quite distinct from the harsh call note.

They breed in May and June, nests being constructed chiefly in willows and Chenar trees, at various heights from the ground. Four or three eggs are laid, the ground colour of which is creamy or pinkish white with spots of bright reddish brown. They measure as follows:—L., 22.1×15.5. S., 19.4×16.0. B., 19.5×16.1. N., 20.9×14.7. Average of 10 eggs, 20.8 by 15.4.

69. Lanuis vittatus. The Bay-backed Shrike.

This species appears to be only a very rare and occasional visitor to the Kashmir Valley. A single bird was observed in Srinagar in May. It is probably not rare in Jammu.

70. Lanius schach erythronotus. The Rufous-backed Shrike.

This is quite one of the commonest birds of the Kashmir Valley, extending up the side valleys to about 7,000' and occasionally higher. A pair was observed in Kargil (Ladakh) at 8,900' which were breeding there. They are summer visitors to Kashmir arriving in April and leaving in September-October.

This species is an extraordinary good mimic and it may be heard repeating the notes of many and various birds in rapid succession and the reproductions are so perfect as frequently to mislead one into imagining that the bird mimicked is actually there. Perfect imitations of the following birds' notes have been heard produced by this shrike:—Common kite, myna, sparrow, swallow, swift, parrot, red-vented bulbul, common babbler, red-wattled lapwing, black partridge, common sandpiper, jungle babbler, and green bee-eater.

Breeding commences in May. Nests are rather bulky cups of twigs, grass, bark and roots, etc., lined with roots, and a little wool or hair. They are placed at various heights from 6' upwards in fruit trees (apples, pears, quinces etc.) willows, poplars, etc. Five is the usual full complement of eggs laid, sometimes only four and less frequently six may be found. They vary a good deal in colour, shape and size but the majority are dull white in ground, fairly heavily marked with sepia or dark grey or yellowish brown in a zone at the big end. Erythristic varieties are rather rare. Measurements of eggs are as follows:—L., 25.6×18. S., 21.5×16.4. B., 22.1×19.0. Average of 95 eggs, 23.0 by 17.9.

71. Lanius cristatus isabellinus. The Pale Brown Shrike.

This bird is not found in Kashmir proper, but occurs in Ladakh, where however it is rare. Two specimens only were observed in May and June in the Indus Valley between 11,000' and 12,000'. It probably breeds in this locality.

72. *Pericocotus brevirostris brevirostris*. The Indian Short-billed Minivet.

Fairly common up the side valleys and on the lower well-wooded slopes of the Himalayas, and Pir Panjal, in summer between 6,000' and 8,500' : in winter lower. They breed chiefly between 7,000' and 8,000' in the blue pine forest. The nest is usually in a blue pine, often between 50' and 80' from the ground. Many nests of this bird are destroyed by the jungle crow.

73. *Dicrurus leucophæus longicaudatus*. The Indian Grey Drongo.

Widely distributed but not very common in Kashmir, it is found in summer in the main and side valleys up to about 6,000'. Nests were observed in June, under construction, in chenar trees.

Eggs are 4 or only 3 in number, pinkish white marked with dark red brown. They average 5 eggs, 23.2 by 17.9.

74. *Acrocephalus stentoreus brunescens*. The Indian Great Reed-Warbler.

Very common in the big jhils and lakes in the valley wherever there is a dense growth of the big bulrushes. They are particularly numerous in the Dal Lake close to Srinagar, arriving in April and disappearing towards the end of September.

They are extremely noisy birds, their harsh notes being constantly heard in the dense beds of rushes in May and June.

Nests are woven into 3 or 4 rush stems 2' or so above the water and 3 or 4 eggs are laid, which are white, more or less heavily marked all over with different shades of brown, grey and sepia. They measure :—L., 24.0 × 16.2. S. and N., 21.0 × 15.4. B., 23.3 × 17.1. Average (29 eggs), 22.6 by 15.8.

75. *Acrocephalus concinens concinens*. The Chinese Paddy-field Warbler.

This is a common bird in the swamps of the Kashmir Valley, frequenting chiefly grassy, marshy swamps and avoiding the beds of bulrushes over water which are the home of the previous species.

They are not very shy, and the cock has rather a pretty little short song which has none of the harsh notes of the song of the Great Reed-Warbler.

Contrary to the statement in the *Fauna of British India* (Birds), revised edition, this bird breeds in swamps and not on hillsides far from water. The nests are placed generally rather low down in the long dense grass found in swampy ground. The nest is woven into several blades or stems of grass and consists of dry grass, dry rush leaves and occasionally some moss neatly woven together with a little animal wool or vegetable cotton, lined with fine flowering grass stems and in one case with red moss fruiting stems. Most nests are within a foot of the wet ground, but one was 2' 6" up.

Eggs are rather broad ovals, without gloss, fair miniatures of those of the Great Reed-Warbler. Ground very pale green, almost pure white spotted yellowish-brown and pale purplish-grey, more or less all over, but chiefly at the broad end. There are also sometimes a black streak or two.

Eggs measure :—L., 18.3 × 12.9. S., 15.7 × 12.7. B., 17.7 × 13.2. N., 17.8 × 12.2. Average of 47 eggs, 17.1 by 12.7.

76. *Tribura major*.—The Large-billed Bush-Warbler.

This is a fairly common bird in suitable places between 8,000' and 12,000' both in Kashmir and in Ladakh. Irrigated grass lands, cultivated fields and low thorny scrub (*Lonicera spinosa*), interspersed with grass, are its favourite haunts. It is a great skulker. Its call is persistent and monotonous, resembling the syllables 'chipi-chipi-chipi' repeated indefinitely at the rate of about 3 to a second, generally from the topmost twig of some bush or small tree.

The nest is a deep cup of grass placed on or very near the ground concealed in grass at the base of some low thorny scrub. It is a most difficult nest to discover, as the location of the nest is not as a rule given away by the parent bird when leaving the nest, owing to the fact that she usually runs like a rat for some distance through the grass, on leaving the nest, before taking flight.

Egg-laying commences in the end of June or early July. Three or four eggs is the usual full complement, but 2 and even 1 hard set eggs were found.

Eggs are pale pinkish in ground spotted all over but specially at the broad end with bright terra cotta markings and a few faint grey underlying markings as well as occasionally very thin black lines. Eggs give the following measurements :—L., 20.6 × 14.8. S. and N., 17.4 × 13.3. B., 18.5 × 15.0. Average (34 eggs), 18.9 by 14.3.

77. *Sylvia curruca affinis*.—Indian Lesser White-throat.

This White-throat is common in the main and side valleys of Kashmir on stony bush-covered hillsides at from 5,000' to about 7,000'. It is also fairly common in Ladakh in the Indus, Shyok, Nubra, Dras and Suru Valleys at from 9,000' to 12,000'. In Kashmir they frequent low scrub consisting of *Berberis*, *Rubus*, *Cotoneaster*, and wild briar, and in Ladakh the thorny patches of *Lonicera spinosa*.

It is however very strange that this bird is found breeding in Kashmir between 5,000' and 7,000' and in Ladakh between 9,000' and 12,000'.

Nests are of fine dry grass and weed stems, thin and almost transparent, placed in thorn bushes especially *Berberis* and *Lonicera spinosa* about a couple of feet from the ground—more rarely nests are built on the lower branches of trees, e.g., the blue pine and are then 8' or 10' from the ground.

Eggs are usually 4, sometimes 3, in number. Kashmir eggs are on the average a little smaller than Ladakh eggs as is shown by the following figures:—

	<i>Ladakh.</i>	<i>Kashmir.</i>
	9,000' to 12,000'.	5,000' to 7,000'
Longest	19·8 × 14·1.	19·0 × 13·1.
Shortest	17·2 × 13·5.	15·6 × 12·0.
Broadest	17·6 × 14·4.	17·3 × 14·0.
Narrowest	17·8 × 18·0.	15·6 × 12·0.
Average (41 eggs),	18·5 × 13·7.	Average (86 eggs), 17·5 × 13·0

This looks very much as if the Ladakh and Kashmir White-throats were incipient species or subspecies.

The song of this white-throat is bright—with occasional harsh notes, and on the whole the effect is pleasing.

78. *Phylloscopus affinis*. Tickell's Willow-Warbler.

This little warbler is exceedingly common at high elevations, above the tree limit, both in Kashmir and Ladakh. It is found breeding in the low scrub *Caragana* and *Berberis*, in Ladakh—juniper, dwarf rhododendron, dwarf willow and berberis in Kashmir at from 10,500' to 16,000'. No other bird approaching this one in smallness is found at these high altitudes, at any rate in Ladakh, and it is indeed strange how such minute birds can survive the low temperatures experienced regularly at night and occasionally also during blizzards, by day.

Nests are of dry grass, domed and copiously lined with feathers, placed in the low thorny scrub from 1' to 2' from the ground. The eggs, four in number, are either pure white or white scantily spotted with pale rufous. These two varieties of eggs are about equally common and both are sometimes found in the same nest or all the eggs in a clutch may be of one kind. Eggs measure as follows:—Length, from 17·1 to 13·0. Breadth, from 14·2 to 11·6. Average (43 eggs), 16·2 by 12·3.

79. *Phylloscopus tytleri*. Tytler's Willow Warbler.

This species is found in the silver fir forests of Kashmir between about 8,000' and 10,000', especially where there are small sunny openings in such forest with shrubby undergrowth of viburnum, etc.

It is not generally a very common bird and I found it rather scarce on the Himalayan Range, but is much commoner on the Pir Panjal above Gulmarg.

The note or song of this species, if it can be called a song, resembles the words 'Let's kiss him' repeated at frequent intervals.

This species feeds a good deal in the forest undergrowth near the ground.

Nidification commences early in June. Nests are small and globular, resembling those of *P. proregulus* and are constructed of lichens, moss, etc., and lined with feathers. They are well concealed in the leafy boughs of silver firs, generally at some considerable height above the ground (it is rare to find a nest within 20' of the ground). The writer never succeeded in finding the eggs.

BIRDS OF KASHMIR

Journ. Bombay Nat. Hist. Soc.



Photo R. E. Holmes, Peshawar

ON THE DAL LAKE



Photo R. E. Holmes, Peshawar

IN CAMP—SIND VALLEY

80. *Phylloscopus collybitus sindianus*. The Sind Chiff-Chaff.

This species is found in the Kashmir Valley on the spring and autumn migrations i.e. during April and October. During the summer months they are found in Ladakh where they breed in large numbers between 10,000' and 14,000'.

They are found between these limits wherever there are willows and low scrub (either or both). The song of the bird is very like, if not identical with, that of the English Chiff-Chaff, and is just as persistent.

Breeding commences in the third week of May. Nests are domed with a fairly large lateral entrance, of grass and weedstems, lined first with a layer of very fine vegetable down—and then with feathers—more rarely with willow cotton and no feathers.

Eggs are four—very rarely five—in numbers white spotted chiefly at the large end with chestnut spots and specks.

The nest is usually placed in low thorny scrub but not infrequently also in the cut thorns which are placed in and near villages on the tops of stone walls and buildings. Where no low thorny scrub exists as in the Puga Valley, many nests were observed in large shrubs of *Myricaria elegans*, several feet from the ground and in one case in a willow 10' up. Eggs measure as follows:—L., 1.70 × 12.0. B., 16.2 × 12.5. S., 14.1 × 11.4. N., 13.5 × 10.4. Average (140 eggs), 15.8 × 12.0.

81. *Phylloscopus collybitus tristis*. The Brown Chiff-Chaff.

This race is found in the Kashmir Valley on migration.

82. *Phylloscopus griseolus*. The Olivaceous Tree-Warbler.

This bird was observed in April and early May on the Takht-i-Suliman, Srinagar, at 5,500', climbing about on mossy rocks. It is also not uncommon in the Indus Valley near Leh in summer, where it was watched climbing about on the trunks of willow trees.

83. *Phylloscopus humii humii*. Hume's Willow-Warbler.

This is one of the commonest of the willow-warblers in Kashmir. In the summer it is found throughout the silver fir forest, more especially near the outskirts or in sunny blanks or glades. Its common call note is 'Tissip.' The nest is domed and lined with fine grass, pine needles and a little hair. It is placed on the ground, usually on a steep bank, in a situation such as might be chosen by the English Willow-Warbler. Four eggs—rarely five—are laid, white well spotted with reddish brown.

They measure:—L., 15.6 × 11.7. S., 12.1 × 10.5. B., 15.5 × 11.9. N., 13.5 × 10.4. Average (50 eggs), 14.0 by 10.9.

84. *Phylloscopus proregulus simlaensis*. Ticehurst's Willow-Warbler.

This bird is widely distributed, but not very common, in the fir forests of Kashmir between 7,500' and 10,000'. Nests were found on low silver fir branches above Pahlgam at 7,500' and above Gulmarg at 9,000' in early July. Eggs were on the point of hatching.

85. *Acanthopneuste magnirostris*. The Large-billed Willow-Warbler.

This species which is nowhere very numerous, is at the same time not rare and is widely distributed throughout Kashmir. It is found in the summer in practically every well-wooded ravine provided there is also a stream or torrent, between 6,000' and 10,000'.

The call of the bird is remarkable and characteristic, consisting of five notes, with a drop from the first to the second and third, which are the same note, and a further drop from the third to the fourth and fifth which are again the same note, but lower than the second and third. The birds spend most of their time in the crowns of trees.

Breeding commences towards the end of June. Nests are roughly domed, of grass, moss, dead leaves and maidenhair fern, lined with fine grass flowering stems and are placed in a hole or crevice in a fallen log or tree or rock often overhanging a stream.

Eggs, four or three in number, are pure white and very fragile.

They measure:—L., 19.4 × 13.9. S. and B., 17.9 × 14.1. N., 18.4 × 13.1. Average (9 eggs), 18.5 by 13.6.

86. *Acanthopneuste occipitalis occipitalis*. The Large Crowned Willow-Warbler.

This is perhaps the commonest of all the Willow-Warblers in Kashmir, being found throughout the mixed forest, Fir forest and Fir mixed with Birch, from 6,000', up to the limit of tree growth at 10,500' or even higher. The alarm call of these birds resembles the word 'Chick-Wee.' The song of seven notes is high pitched and monotonous—repeated all day and every day from the crowns of the silver fir trees and resembles the syllables Tee—Tsee tsee—Tsee tsee—Tsee tsee.

Nesting commences in June. Nests are composed of moss, with an attempt at a dome, and are either unlined or lined with a little hair.

The eggs, four in number, are pure white and fragile, measuring:—L., 17.5 × 12.5. B., 15.9 × 13.0. S., 15.1 × 12.1. N., 15.9 × 11.5. Average, 36 eggs, 16.0 by 12.3.

87. *Seicercus xanthoschistus albosuperciliaris*. The Kashmir Grey-headed Warbler.

This bird, in spite of its name, is not at all common in any part of Kashmir with which the writer is acquainted. It was observed in early spring at about 6,500' both in the Sind and Dachigam valleys. It doubtless breeds in both these localities.

88. *Horornis pallidus pallidus*. The Pale Bush-Warbler.

This is a common bird in Kashmir, frequenting the lower and middle slopes of the main and side valleys in summer between 5,500' and 8,000'. They frequent bush-covered hill slopes, avoiding tree forest, and they are apt skulkers.

The call of this bird is remarkably loud and very peculiar. It consists of two 'phrases.' The first, consisting of five notes, commences with a long drawn-out whistle. The second of three notes also commences with a long-drawn note, in a minor key. The two parts or phrases may be expressed by the words

You..... *mixed-it-so-quick.*
He'll..... *beat you.*

The first words 'you' and 'he'll' being drawn out to nearly two seconds in length each.

The nest is rather untidy, domed, with a large side entrance, composed of dry grass and lined with feathers. It is placed low down in a bush or bramble or in a tuft of long dead grass.

The eggs, 3 or 4 in number, are deep chocolate or purple-brown and measure:—L., 18.3 × 13.5. B., 17.7 × 13.8. S., 16.4 × 13.0. N., 16.4 × 12.0. Average, 26 eggs, 17.5 by 13.2.

In winter this bird descends to the foot-hills and is even found commonly at that season on the bush-covered slopes along the Soan and Leh Rivers, near Rawalpindi.

89. *Regulus regulus himalayensis*. The Himalayan Gold-Crest.

Not very common but generally distributed in the Silver fir forests at from 9,000' to 10,000'. Seen near Gulmarg—also up Lidar Valley above Tanin.

90. *Cephalopyrus flammiceps*. The Fire-capped Tit-Warbler.

Not uncommon in mixed forest of hazel, elm, walnut, etc., just below the silver fir zone in June and July. Also seen early in August at 11,500' in the Lidar Valley near Astormarg, feeding in the dwarf willows.

91. *Oriolus oriolus kundoo*. The Indian Oriole.

Very common in the Kashmir Valley throughout the summer, arriving in April and leaving towards end of September. They are specially numerous in and around Srinagar. Their fine flute-like notes may be heard in chorus every morning in May at dawn, together with the song of *Turdus unicolor*.

They ascend the side valleys to about 7,000' only. They are also found in the Indus Valley in Ladakh even as high as Leh at 11,500', but here they are somewhat rare.

They breed in June and July the nest being woven cradle-like into branches of the Chenar, fruit trees and willows.

The eggs, usually three in number, more rarely four or only two, are white with a few very dark reddish-brown spots in which the colour often seems to 'run' into the white ground. They measure:—L., 32.5×20.7 . B., 31.0×21.4 . S., 23.6×19.7 . N., 26.5×18.9 . Average (17 eggs), 29.3 by 20.3 .

92. *Sturnus vulgaris humii*. The Kashmir Starling.

Exceedingly common in the Valley of Kashmir, but not found to any extent up the side valleys or on the surrounding hills. They arrive in the last week in February and early March and leave in October. The F.B.I. says this species is also found in Garhwal and Nepal. I very much doubt this and believe that this starling is not found in the Himalayas south or east of Kashmir except as a rare straggler.

Breeding commences in May, nests being built of grass and lined with feathers in holes in trees (willows, chenars, mulberries, etc.) as well as in banks and in houses. Five, and rarely six eggs are laid which are uniform very pale blue in colour. They measure:—L., 30.7×20.9 . B., 26.6×2.16 . S., 26.4×19.8 . N., 27.7×19.2 . Average, 92 eggs, 28.8 by 20.7 .

93. *Acridotheres tristis tristis*. The Common Myna.

Common in the Valley of Kashmir, especially in and around Srinagar and in all the big villages. Extending up the larger side valleys to about 7,000'. They are resident in Kashmir throughout the year.

Breeding commences in May, nests being placed in holes in buildings, in trees and in steep banks.

Five eggs are laid which are of a deeper blue than those of the Starling.

They measure:—L., 34.6×22.8 . B., 33.9×23.0 . S., 29.7×21.2 . N., 32.3×20.5 . Average, (15 eggs), 32.3 by 21.9 .

94. *Cinclus cinclus kashmiriensis*. The White-breasted Asiatic Dipper.

This species is not rare on the mountain streams and torrents descending from the Himalayan Range especially at elevations above 10,000', near the snow beds and glaciers. It is still commoner in Ladakh from 11,000' up to at least 16,000'. They seem to prefer clear, swift-flowing torrents interspersed with stones and boulders and they are constantly plunging into the ice cold water remaining below often for $\frac{1}{2}$ a minute, in search of food. They have a bright rather loud song, heard chiefly in May and June.

They breed from May to July according to elevation, the nest being a large oven-shaped mass of moss lined with fine dry grass, which is placed in a crevice in a rock or hole in a bank overhanging swift flowing water. Three or four eggs are laid long pyriform ovals, pure white, varying in length from 27.2 to 25.0 and in breadth from 19.2 to 18.4. Average of 8 eggs, 26.1 by 18.8 .

95. *Cinclus pallasii tenuirostris*. The Brown Dipper.

This is much commoner than the last in Kashmir, but is found at lower elevations, chiefly from 3,000' up to 9,000' and occasionally higher. In their habits they resemble the White-breasted Dipper. They are very early breeders, commencing in February and continuing on till May. Nests and eggs resemble those of the last species. Eggs measure about 25.4 by 18.3 .

96. *Perrisospiza icteroides icteroides*. The Black-and-Yellow Grosbeak.

Fairly common in the silver fir and mixed forests on the Himalayan slopes, as well as on the Pir Panjal from 8,000' to 10,000'. They are found only in high forest. They feed largely on the fruits of shrubs and undergrowth in these forests. They have no song, only a call of three clear notes, uttered at frequent intervals. They construct their nests high up in fir trees, in June.

97. *Pyrrhula aurantiaca*. The Orange Bullfinch.

This handsome bird is a resident species in Kashmir being found in the lower mixed forest, in the side valleys, in winter at from 5,500' to 6,500' and in summer between 9,000' and 11,000'. They are not very common anywhere, and are rather solitary, quiet, unobtrusive birds, their presence being usually first detected by their soft, clear, low call note.

In the breeding season they are to be found in openings in the silver fir and birch forest, especially where there is plenty of young tree growth and herbaceous weeds.

They commence building early in July. Nests are usually in silver fir or yew trees, either in a patch of young trees or on the lower branch of a big tree.

A nest found on August 4 at 9,000' in the Lidar Valley exactly resembled that of the English bullfinch being composed of thin twigs and sticks and lined with fine roots. The young had just left the nest, which was placed on the horizontal branch of a silver fir sapling, sheltered above by a second branch and four feet from the ground. It was in a thick patch of similar young trees.

A few days later in another locality in open silver fir forest at the same altitude a young bird was observed only just able to fly. All the birds seen were in the fir or birch and fir forest and they certainly do not breed above the forest limit. I saw no bulfinches on the Pir Panjal Range.

98. *Pyrrhospiza punicea humii*. The Western Red-breasted Rose-Finch.

This large Rose-finch is widely distributed, but not common, at high elevations both on the Himalayan and Pir Panjal Ranges. They are always found well above the limit of tree growth generally between 12,000' and 16,000', they frequent steep, rocky ground near or above the snow line.

They undoubtedly breed in such rocky ground but no nests were discovered.

99. *Propasser thurus blythi*. The Kashmir White-browed Rose-Finch.

This Rose-finch is found in summer above the tree limit from about 10,500' to 12,000' elevation. They frequent the large dense patches of dwarf juniper so common at these altitudes. They are usually met with in pairs and are not common or numerous anywhere.

The call of this bird consists of a rather loud harsh whistle repeated from 6 to 8 times, somewhat reminiscent of the call note of the White-faced Nuthatch. These birds were met with towards the head of the Lidar and Wardwan Valleys. They were evidently about to breed when seen, early in August, and they undoubtedly nest in the dwarf juniper but no nests were found. It is probable they breed about the third week in August.

100. *Propasser rhodochrous*. The Pink-browed Rose-Finch.

This bird is found generally distributed both on the Himalayas and Pir Panjal at from 9,500' to about 11,500'. They are decidedly more numerous than the previous species. They frequent open fir and birch forests as well as Willow bushes and dwarf Juniper. Nidification commences in the third week of July and fresh eggs are obtainable till the middle of August.

Nests are built in low bushes, willow, *Lonicera*, etc., as well as in small fir trees and are usually from 2' to 4' from the ground. They are of rather solid construction, composed of fine twigs, birch paper and moss followed by fine weed and grass stems and lined with hair.

The eggs 5 or 6 in number are rather deep greenish-blue sparsely spotted at the broad end with black spots. Occasionally the eggs are spotless blue.

They measure:—L., 19.6 × 14.5. B. 19.2 × 14.6. S. 17.4 × 13.9. N. 17.6 × 13.7. Average 12 eggs, 18.5 by 14.1.

This species was not met with in Ladakh or in Suru.

101. *Carpodacus erythrinus roseatus*. Hodgson's Rose-Finch.

This is by far the commonest Rose-finch both in Ladakh and in Kashmir, but especially in Ladakh where it is exceedingly numerous wherever there is bush cover between 9,000' and 12,000'.

These birds pass through Kashmir on their way to their breeding haunts in the higher mountains in the end of May and in June. They were first seen in the Indus Valley on the 1st June.

Nidification commences in the first week of June and fresh eggs are obtainable from about the middle of June to the end of July. Nests are composed of dry grass and weed stems, lined with fine roots or hair or with both. They are placed in low bushes, in Ladakh mostly in *Lonicera spinosa*—also in wild briar and dwarf willow. They are generally from 1' to 3' from the ground but occasionally as high as 7'.

The eggs are usually four, very rarely five in number. They are generally rather long ovals, inclined to be pyriform, of a beautiful blue, spotted chiefly at the broad end, with spots or streaks of black or red brown.

It is not uncommon to find a clutch spotless blue or with very minute specks,

The song, during the breeding season, is a bright, cheery refrain of from 5 to 8 notes, repeated at intervals by the cock bird, usually from a tree or bush not far from the nest. Each individual has his own particular combination of notes, which is invariable, and this is often shared by the other birds in his immediate vicinity, but in different localities there is considerable variation. These different songs do not, however, differ in character and are always easily recognizable as belonging to this finch.

The vast majority of these birds retire to breed beyond the Himalayan Range into Ladakh (including the Dras and Suru Valleys) and comparatively few breed in the Kashmir side of this range towards the head of the Sind, Lidar and Wardwan Valleys.

Eggs measure as follows:—L., 23.1×15.3 . B. 21.4×15.8 . S., 18.8×15.2 . N., 20.0×13.6 . Average of 202 eggs, 20.8 by 14.9 .

102. *Carpodacus rubicilla severtzovi*. Severtzov's Rose-Finch.

A few birds of this species were seen and specimens secured, in the first week of June in the Indus Valley near Upshi at 11,000' and again a few days later in the Gya Valley at 12,000'. They were seen in bare rocky ground. They were not seen subsequently and it is not known if they breed in Ladakh or not.

103. *Carpodacus rubicilloides*. This species, very similar to the last, differs from it chiefly in that the back is streaked with brown and not uniformly grey as in the former.

It is a very common bird in the breeding season throughout Eastern and Southern Ladakh. They are found between 12,500' and 15,000' wherever Tama bushes (*caragana* sp.) or any other shrubs are found.

They were found common near the Tsomoriri Lake and near Puga in Rupshu towards the end of June. They were then building. At Shushal (14,200') and all along the southern border of the Pangong Lake they were breeding in large numbers early in July.

The song of the bird, if song it can be called, is very poor—consisting of two notes only, the first higher in the scale than the second. The song may be syllabified as follows:—

Tsee-soo-soo-soo or Tsee-Tsee-soo-soo-soo-soo. The alarm call is a loud 'Twink' like that of the English chaffinch.

The nest is a large massive cup composed of sticks and twigs followed by a layer of dry grass, and lastly a lining of wool and hair.

The full complement of eggs is usually 5 but 4 and even 3 incubated eggs may be found. They are a rather deep blue, sparingly marked with a few large black spots.

The eggs vary in length from 27.2 to 22.2 and in breadth from 19.0 to 16.2.

The average of 90 eggs is 24.1 by 17.6.

104. *Carduelis caniceps caniceps*. The Himalayan Goldfinch.

This a very common bird in Kashmir, and is a resident species. In the winter months they are seen in larger or smaller flocks in the valley, and are then common around the base of the Takht near Srinagar. They do not, however, all remain in Kashmir in winter as they are also met with in the plains below the foothills as far out as Rawalpindi where however they are not common.

By the end of February they begin to sing, often in chorus, and towards the end of May they begin nesting in blue pine trees as well as in small trees and large shrubs on the lower hills between 5,500' and 7,000'.

After rearing the first brood at this comparatively low altitude they leave early in July for higher altitudes and have second nests at from 9,500' to 11,000', nesting in blue pine, willows and birches. Second nests are to be found during July and August in the high country on both sides of the Himalayan Range, including the Dras and Suru Valleys and also in the Indus Valley in Ladakh proper.

The song of the Himalayan goldfinch is of a high order and resembles that of the European goldfinch.

The nest also resembles that of its western relation being a beautiful neat little cup composed of fine vegetable materials compactly woven together and lined with fine vegetable cotton, chiefly willow down, with a little hair. The nest is placed in a tree or bush at heights of from 6' to 60' or 70',

The eggs, five or four in number, are pale skim-milk blue marked in various ways but never very heavily with spots or streaks of reddish-brown or greyish-brown. Sometimes the eggs are without markings.

Egg measurements are as follows:—L., 19.6×13.5 . B., 19.0×14.0 . S., 16.4×12.9 . N., 17.3×12.7 . Average (38 eggs) 18.0 by 13.2 .

105. Callacanthis burtoni. The Red-browed Finch.

This is a common bird in the silver fir forests of Kashmir both on the Himalayan and Pir Panjal Ranges. In the summer they are found at from 8,500' to 10,000'. They are tame and confiding birds and may be watched at very close quarters. They feed chiefly on ground, from which snow has recently melted, or on low shrubs, the undergrowth in the Fir forests. They are essentially birds of the forest, being rarely seen in the open.

They undoubtedly breed in the fir forest but no nests were found in spite of much search. They are, it is believed, early breeders as young birds, strong in the wing were seen early in June near Gulmarg. The bird has no song, only a call note something resembling that of the bullfinch.

106. Acanthis flavirostris ladacensis. The Ladakh Twite.

This species is exceedingly common in Central, Southern and Eastern Ladakh at elevations of from 13,500' to 16,000', where they breed. They frequent areas of Tama scrub, the Tibetan furze (*Caragana sp.*).

They were first observed in Rupshu near the Tsokar Lake at 15,000' in the first week in June. They had not then commenced breeding. At Puga, (14,000') around Shushal (14,200') and along the Pangong Lake (14,000') they were found breeding early in July. Nests were composed of fine dry grass, lined with hair and were usually placed in low Tama bushes a foot or two above the ground. One nest was found actually on the ground, and others in dwarf willow, several feet up, a single nest being 12' from the ground.

Four and very rarely 5 eggs are laid which are very pale skim-milk blue in ground, marked chiefly in a zone at the broad end with pink, pinkish purple or reddish brown spots and with sometimes a few streaks of very dark brown.

The eggs vary in length from 19.3 to 16.3 and in breadth from 14.1 to 12.9, the average of 46 eggs being 18.0 by 13.2 .

107. Metaponia pusilla. The Gold-fronted Finch.

This is a very common bird in Western Ladakh (the Dras and Suru Valleys) less common in the Indus valley. They are also found in Kashmir proper especially in the spring and autumn, but they appear to retire for breeding purposes to the dry rainless country beyond the Himalayan Range.

The cock bird has rather a sweet little song, not often heard.

Breeding commences in the end of June and fresh eggs are obtainable throughout July well on into August. Nests resemble those of the goldfinch but are not quite so neat or compact. They seem to be invariably lined with fine willow down. Five or 4 eggs are laid, very pale blue or white in ground marked chiefly at the broad end with pinkish-brown or claret some dark spots and some light. Spotless eggs also occur.

Nests are placed almost always in low bushes of the wild rose, from 2' to 4' from the ground, less frequently in willow bushes or trees 5' to 7' from the ground. One nest was observed in a cleft in a steep rocky cliff 7' up, and another in an umbelliferous plant growing out of a cliff, but these were exceptional nesting sites. Eggs measure as follows:—L., 18.6×12.8 . B., 16.5×13.3 . S., 15.0×12.4 . N., 15.0×12.4 . Average of 85 eggs, 16.7 by 12.6 .

108. Hypacanthis spinoides spinoides. The Himalayan Greenfinch.

This is a fairly common bird in summer at moderate elevations in Kashmir, both on the Himalayan and Pir Panjal Ranges.

They frequent the more open portions of mixed forest, both pine, and fir, chiefly between 6,500' and 8,000', but they are also found higher, occasionally up to 11,000'.

The male has a pretty little song. The call note much resembles that of the goldfinch. Breeding commences in July and continues throughout August into September. Nests are placed rather high up in fir or pine trees.

109. *Passer domesticus parkini*. The Kashmir House-Sparrow.

This is an exceedingly common bird throughout Kashmir and Ladakh.

In Kashmir it is a resident species, found throughout the main valley and up the side valleys to about 7,000'. On crossing the Zoji La into Ladakh the bird is found at much higher elevations, viz. from 9,000' up to 15,000' wherever there is permanent cultivation.

The number of birds in Ladakh as well as in Kashmir, in the vicinity of villages and cultivation is almost incredible, and it is probable that many migrate to the plains in winter, but a very substantial residue are permanent residents in Kashmir as well as in Leh (Ladakh).

Breeding commences in Kashmir early in May and in Ladakh fully a month later. Nests are the usual untidy domed affairs, of dry grass lined with hair and feathers.

Four, 5 or 6 eggs are laid which vary considerably in colour but resemble generally those of the European house-sparrow. As is the case with the latter bird, one egg in each clutch is usually much lighter in colour than the rest, with more decided and less blotchy markings.

Eggs measure as follows:—L., 23.5×15.7 . B., 20.9×15.9 . S., 20.2×15.4 . N., 20.5×14.8 Average (78 eggs), 21.7 by 15.4.

110. *Passer rutilans debilis*. The Kashmir Cinnamon Sparrow.

Common near villages and cultivation in Kashmir from about 6,000' to 9,000'. It is more of a forest sparrow than *P. domesticus parkini* and where these two species overlap, as at Pahlgam, 7,000' in the Lidar Valley the House-Sparrow is found in the village and the Cinnamon Sparrow in the outskirts of the neighbouring forest.

It is a common bird in and around Gulmarg and here the House-Sparrow is not found. The Cinnamon Sparrow does not cross the Himalayan Range and is not found in Ladakh.

Breeding commences in June, nests being placed usually in holes in trees at various heights from the ground up to 30' also in houses, under the eaves, as in Gulmarg. The nest is composed of dry grass and is lined with hair and feathers.

Four or 5 eggs are laid smaller and more darkly marked than the eggs of the house-sparrow but as with that bird one egg is usually much lighter in colour than the rest.

Eggs measure:—L., 21.0×14.0 . B., 19.2×14.5 . S., 17.4×13.1 . N., 17.4×13.1 . Average (40 eggs), 19.1 by 13.9.

111. *Montifringilla nivatis adamsi*. Adam's Mountain-Finch.

This Finch is fairly common in Central, Southern and Eastern Ladakh between about 12,500' and the snow line. It is not found in West Ladakh (the Dras and Suru Valleys) nor in Kashmir proper.

They frequent bare rocky ground but are often to be seen feeding on moist ground near streams. The song is poor and very monotonous. The usual mode of progression is by running, not hopping. They have a peculiar way of flying, especially in the neighbourhood of their nests, a slow sort of hovering flight with the wings raised above the back and with tail spread, displaying the white of the wings and tail which is largely concealed when the bird is at rest. They are tame and fearless of man.

Breeding commences early, about the middle of May. Nests are placed under, or in narrow crevices in, rocks and are often very difficult to obtain without a crowbar, being often fully 2' from the surface.

Nests are composed of fine yellow flowering stems of grass lined copiously with hair (of the yak, marmot, etc.) and with feathers.

The eggs are pure white. Four is the full complement. They vary in length from 24.6 to 20.7 and in breadth from 17.8 to 16.2.

The average of 21 eggs is 22.9 by 16.9.

112. *Fringillauda nemoricola altaica*. Stoliczka's Mountain-Finch.

This is a very common bird at high elevations in Kashmir, being found on both sides of the Himalayan Range and on the Pir Panjal but not in Ladakh proper. Its distribution does not overlap that of Adam's Mountain Finch. They are found in summer at elevations of from 11,000', to 13,000' above the limit of tree growth, and are generally more or less gregarious. They frequent open